

ABSTRACT OF THE DISCLOSURE

Intermetal dielectric (IMD) and interlevel dielectric (ILD) that have dielectric constants (K) ranging from 2.0 to 2.6 are prepared from plasma or photon assisted CVD (PACVD) or transport polymerization (TP). The low K dielectric (LKD)
5 materials are prepared from PACVD or TP of some selected siloxanes and F-containing aromatic compounds. The thin films combine barrier and adhesion layer functions with low dielectric constant functions, thus eliminating the necessity for separate adhesion and barrier layers, and layers of low dielectric constant. The LKD materials disclosed in this invention are particularly useful for $< 0.18 \mu\text{m}$ ICs, or when
10 copper is used as conductor in future ICs.